Lab: Puzzling Pollution

(adapted from Cabrillo Marine Aquarium)

(MAKEUP VERSION)

Background: Baleen whales feed on crustaceans such as amphipods, copepods and krill, as well as small fish. With changes in ocean temperature, upwelling, acidification and other human introduced pollutants, whales can be impacted through the food web. In some cases, such as temperature rise and acidification, a decrease in whale prey can lead to population decreases. In other cases, such as mercury or persistent organic pollutants, whales can be harmed by the biomagnifications of these toxins up the food chain. This game demonstrates the relationship between trophic levels of a food web and the impact of humans on those trophic levels.

What We Did in Class: Students played a Marine Ecology version of Jenga to discover the relationship between tropic levels, pollution, bioaccumulation and biomagnification.

Prelab Questions (not given):

1. Describe characteristics of a Baleen whale. Name the suborder and an example of a Baleen whale.

2. Explain the difference between bioaccumulation and biomagnification.

3. How might creatures as large as whales be affected by small pollutants?

Watch the video https://youtu.be/FdPGRiYxKXg and answer the following questions:

4. Why do humans underestimate the effects of man-made pollutants in the marine environment?

5. Describe the food chain presented in the video.

6. What happens to toxin levels as you increase in trophic level?

7. Name two species that are particularly susceptible to bioaccumulation.

8. How do heavy metals enter the ecosystem?

9. What are the effects of methyl mercury on individuals?

10. What did you learn from this makeup lab?